

SOME POINTS ON THE ETIOLOGY AND TREATMENT OF ENURESIS*

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No one has seen many children suffering from enuresis without asking the question "why are the results of treatment so pre-eminently unsatisfactory?" The answer to this question is that enuresis is essentially not a clinical entity, but a clinical symptom. No one would endeavor to treat headache without attempting to discover its cause; likewise no one would endeavor to remove abdominal pain, without locating the responsible viscus. On the contrary, it is lamentable to note that belladonna or the bromides are usually prescribed in the treatment of enuresis without thought being given to the etiological factor. Unfortunately, many of the cases are purely neuroses, and as such, the cause can not be found, but on the other hand, many are intimately connected with some organic disturbance, and the treatment depends directly on its removal.

The textbooks, unfortunately, fail to call attention to many of the causes of enuresis, and most of them are content to say that if a child with enuresis has adenoids, remove the adenoids; if he has phimosis, circumcise him, and he will often be cured. It is perfectly plain that too little attention has been paid to the connecting link, between these apparently etiological factors, and the resulting condition. Some conditions of the nervous system must have considerable bearing, otherwise many more children with adenoids and phimosis would have urinary incontinence.

Given a child with malnutrition, or pronounced secondary anemia, the whole body is carefully examined to determine the cause of the condition. Given a child with enuresis, and usually only the prepuce and naso pharynx are examined. This explains why treatment so often fails.

What, then, should be the procedure in the examination of a child with incontinence of urine? Primarily, the urine should be examined, and this examination does not mean simply an albumen and sugar test with the ordinary microscopical examination; highly acid urine has often been credited with causing enuresis; but the cause of the high acidity usually remains concealed. The most frequent cause of high acidity of the urine is a colon bacillus infection, and bearing this in mind, no one is justified in treating enuresis without first culturing the urine. Twenty per cent of the cases of enuresis that presented themselves at the Cooper Medical College last year were caused by colon bacillus infections of the urinary tract.

Diabetes in children is often accompanied by enuresis, and this condition should always be thought of in treating a case.

The presence of calculi-polypi and tuberculosis in the bladder of children is not very common, and in eliciting the history, their occasional occurrence should prompt the question as to pain on urinating and hematuria.

It will be only necessary to briefly mention the importance of discovering the presence of abnormal

conditions in the external genitals of children suffering from enuresis. In this connection may be mentioned vulvitis and vaginitis in girls, and urethritis and balanitis in boys.

The rectum, when irritated, is frequently a cause of urinary incontinence in children. This is best exemplified by the frequent occurrence of enuresis in children suffering from oxyuris. A rectal polypus, or, rarely, a foreign body in the rectum, will keep up a persistent enuresis for months, which facts show the importance of examining the feces and rectums of these children. After a local examination of the genito-urinary and lower alimentary tract has been made and the urine and feces carefully investigated, then the condition of the central nervous system should be looked into. The following interesting case illustrates the importance of this procedure.

A child nine years old was brought into the clinic with a history of enuresis from birth. He had been circumcised without result. On examination, it was noted that there was a persistent priapism. There was no paralysis anywhere, no disturbance of the reflexes or sensory nerves, no history of injury was elicited, but the priapism suggested some spinal cord disturbance, and the examination of the back showed what looked like a fatty tumor over the sacrum. Palpation, likewise, gave the impression of a lipoma, but on further examination it was noted that at its base there was an opening, connected with the sacral canal. This was one of those rare cases of spina bifida occulta, with incontinence of urine and occasional incontinence of feces, but without other symptoms. He had been taken from clinic to clinic, needlessly circumcised, simply because the primary cause had not been discovered. The sudden development of enuresis in older children is suggestive of tabes dorsalis, or petit mal. W. Spitzmueller (*Medizinische Klinik*, Jan. 3, 1910), reports a case of tabes occurring in a boy of nine, in whom the first symptom was suddenly developing enuresis; and Marburg, of Vienna, has reported a series of such cases. The presence of the Argyll Robertson pupil and Romberg's phenomenon, with a loss of knee-jerk, will clear up this diagnosis. It is, however, much more difficult to diagnose petit mal until the typical attacks come on, but it should always be born in mind.

More carefully reviewing these etiological agents reveals two very interesting factors; first, that such causes usually develop after a child has passed the age when he should normally control urination; and second, that they take a large number of the cases of enuresis out of a strict classification of neurosis. *One very practical and important conclusion can be drawn from this, and that is, given a patient who has learned to control micturation at the proper age, the sudden development of enuresis should cause one to suspect some distinct pathological condition as an etiological factor.*

Granting that many cases of enuresis have definite causes, how is one to explain the innumerable cases in which the history is obtained that the child has not been able to control his urine since birth? Usually, it is described as a neurosis. That is only one of the many loopholes that medicine affords us for saying "we do not know."

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So much has been written, concerning the physiology of the thyroid gland that one hesitates in assuming that one of its many functions should consist in influencing the muscles that control micturition. Anything, however, that offers any hope of improving the condition of these unfortunate children, should be investigated, and this is the attitude that most men assumed when Williams reported his first cases in the *Lancet* May, 1909, in an article entitled "Adenoids, Nocturnal Enuresis and the Thyroid Gland." He reports twenty-five cases treated with thyroid extract, in some of which the results were brilliantly successful. His attention was first called to the possible bearing of the thyroid gland by a case in which the adenoids were removed to stop enuresis, but after which operation the enuresis was aggravated. He thought of the relation of the thyroid gland and lymphoid tissue and deduced that in the removal of the adenoid there had been a reduction of the thyroid secretion, and he decided to try the extract therapeutically. He used one-half grain of the extract twice daily and his result was very excellent. He then used it in a series of twenty-five cases, and of this number, seven were cured, four were lost track of, one failed completely, and thirteen had ameliorated, which were not under treatment long enough to draw conclusions from. He used from one-half grain twice daily, to two and one-half grains twice daily, watching for symptoms of hyperthyroidism, tachycardia, tremor, excessive perspiration, diarrhea, etc. Williams reports a case of malnutrition, after nephritis, to whom he gave thyroid in large doses; as a result of this, the boy got enuresis, and he concluded that too much thyroid, as well as too little, could cause this condition. To say the least, Williams' conclusions are not convincing. Primarily, if either lack of thyroid, or excessive thyroid is the cause of enuresis, why do we not observe the same condition in cases having undoubted disturbance of this gland; and secondly, his conclusions are drawn upon too little satisfactory evidence.

Nevertheless, with the object of determining the value of this treatment, which could be no worse than many others that had been tried, it was decided to use thyroid extract in the children's clinic at the Cooper Medical College in those cases in whom no etiological factor could be found after careful examination. Ten cases were treated as follows: One-quarter grain thyroid extract was given three times a day, increasing to one-half grain three times a day; in addition, two measures were prescribed that will be mentioned more in detail later. Fluids were not allowed after 4 P. M., and the foot of the bed was decidedly elevated at night. Of these ten cases, eight improved; but they have not been under observation long enough to draw any definite conclusions. Furthermore, the influence of the posture and dietetic treatment must not be overlooked. Two did not improve. Of the eight who improved, in four cases circumcision had been previously performed without result. The future alone will prove the efficacy of thyroid in these cases. It is planned during the next year to treat the cases of enuresis as follows: One case will be given thyroid alone. The second case will be treated posturally and dietetic-

ally, and the third case will be given tonic treatment; a further report will be made after more children have been examined. It seems reasonable to call attention to two points that may help to prevent these cases of enuresis in which the children never learn to control micturition. An adherent prepuce, doubtless, has some effect on the minds of very young babies, and may be able to keep up some reflex irritation, whereby urination remains involuntary, so that every obstetrician should make it a part of his duty to forcibly retract the prepuce on the fifth day after birth. Not only should he do this, but he should instruct the mother to do it at least twice a week, up to the time a boy is five years old. To say the least, it is conducive to cleanliness, and circumcision would be a rare operation if this were systematically done. In addition to this it seems reasonable to assume that if more attention were directed to training young infants to control the bladder, that enuresis would be much less prone to occur. Every one knows of children who, before they are one year of age, become properly trained. It is too often the practice to let children go on two or three years without training, with the assumption that when they know better, they will adjust themselves. This is a misconception, because the younger the child, the easier are habits formed, and this function must unquestionably come largely in the realm of habit.

It is not within the province of this paper to enter into the details of the treatment of all conditions that may cause enuresis, but considering the very delightful results that may be obtained in those cases of enuresis due to colon bacillus infection, it seems advisable to outline the treatment employed. The diet should be regulated to avoid irritating and stimulating foods. Fifteen to twenty-five grains of urotropin should be given during the course of twenty-four hours, well diluted in water. This will usually stop the enuresis, but to clear up the bacilluria, it is necessary to prepare an autogenous vaccine, and to give an injection of this every fourth day. The dose, at first, should be small, five to ten million, and increased as rapidly as possible up to fifty million, always giving less than a quantity that produces a marked reaction, as evidenced by rise in temperature, rapid pulse, headache, prostration, nausea, etc. The history of the following case is illustrative: H. C., girl seven years of age, was brought into the clinic suffering with enuresis of three years' standing. There was no pain on urination, no hematuria. The examination of the child was negative as regards heart, lungs and abdomen. Nervous system was normal. Feces contained no ova or parasites. External genitals irritated, but otherwise normal. Examinations of the urine showed it highly acid and cloudy. Microscopical examination revealed no pus. Culture on Agar gave a pure growth of colon bacilli. Patient was put upon urotropin, twenty grains daily, and the enuresis cleared up in four days. The bacilluria persisted, however.

Whether the use of thyroid extract is efficacious or not in the treatment of this very distressing condition, only the future can determine, but one thing has been definitely proven, and that is, that the

postural and dietetic treatment are of undoubted value; their action is, naturally, combined. Mothers are advised to give the children no fluid beyond a glass of milk for the evening meal, after four in the afternoon; then they are told to place blocks under the foot of the bed so that that part is raised about eight inches. The object of this is to keep the urine from coming down and irritating the neck of the bladder, and it is often very efficacious.

It is perfectly plain why the dietetic and postural treatment of enuresis should be of value; but to say the least, it is extremely difficult to see what influence the thyroid gland can have over micturition. A report coming from a man of Williams' integrity naturally warrants attention, and it is to be hoped that more experience will prove his deductions to have been well founded. It is to be earnestly desired that the coming year will see the thyroid therapy of enuresis given a very thorough trial, so that we may be able to reach a definite conclusion as to its value. Patients to whom this drug is given should be seen two or three times a week to be sure that no untoward effects are produced. Otherwise the treatment is simple, and if satisfactory, will certainly prove a boon in the therapy of a condition which until now has been very resistant to treatment.

Discussion.

Dr. Langley Porter, San Francisco: I have very little to add to this paper. The point of the communication which seems to me to be of particular value is the frequency of colon bacillus infections of the bladder and renal pelvis in children. I have nothing to add on the matter of treatment except this one practical fact, in treating an enuresis we very frequently experience that children have difficulty in urinating when taken up after going to bed. We have instructed the mothers to take these children up one hour after going to bed. It has developed that the child is taken from a warm bed and put on the cold floor, and this exposure to cold causes a reflex action and the child has to urinate again about an hour after being put back to bed. We always have these children kept in bed and given a bottle in which to urinate until such time as the condition of enuresis is remedied. With regard to the thyroid therapy it has not impressed us in the clinic and we do not expect any particular success with it, but we propose to try it for experimental purposes. Another point is that concentration of the urine is very frequently the cause of enuresis. Children are not given enough water to drink, they are given too much milk and too much sugar, meat, proteid and concentrated food in early childhood, and consequently the urine is concentrated.

Dr. W. F. Cheney, San Francisco: First of all I wish to confirm what Dr. Fleischner has said about determining the etiology of this trouble. These cases are so very common that we cannot have any routine and cannot give one plan of treatment suitable to all cases. It is absolutely foolish to plan treatment until investigation has been made as to the cause; but after having eliminated all known causes there remains the largest group of all, in which no cause is discernible. We must have some plan of treatment for this group. I will say nothing about the colon bacillus conditions, but the large group in which no tangible cause can be discovered. These cases are called a neurosis; but stating the thing a little more plainly, it is probably a hyperesthesia of the mucous membrane of the bladder. In this group of cases the plan of treatment that works most satisfactorily is first of all the limitation of fluids after four o'clock, so that the bladder will hold less fluid during the night. Secondly, the limitation of the diet at the evening meal to a small amount.

Also taking the children up after having been put to bed, has a good effect in the majority of cases. The old well tried belladonna remedy can also be given in the form of atropin and is a well established method in the treatment of these cases, and I have had excellent success with it.

Dr. E. C. Fleischner, San Francisco: In calling attention to the thyroid therapy I did so with the object of reporting our results in the clinic during the past year. I am not particularly sanguine over the results. I wish to call your attention to one point in the use of belladonna. It is preferable to give it in the form of suppositories, as it interferes very much less with the appetite and digestive system. The diversity of the treatment in this condition is great, and one hesitates to think that drugs have any great value. In Berlin these children are inverted and held up by the feet for a certain length of time each time they are brought to the clinics for the psychological effect. In the French clinics they have introduced cocain in the sacral cavity and later normal saline solution. The whole subject is important because the cases are so numerous and treated with such great difficulty. I feel that the training of these children will have more to do with the cure than any other single feature.

CRIMINAL ABORTION.*

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The desire to prevent conception or to get rid of the products of conception, is as old as mankind. I do not expect to be able to change the condition of affairs as it exists at present, but I do believe that a proper exposure of the methods of the criminal abortionists, and the adoption of laws to prevent them from flaunting their dastardly vocation in the face of the public, would result in saving the lives of a large number of innocent victims, and in preserving the chastity of numerous girls. The extent to which criminal abortion is practiced in the large cities is appalling, and a visit to any of the offices of the advertising abortionists shows them to be reaping a harvest of money by duping their victims or by actually killing the unborn babies.

I am sorry to have to say that the committing of abortion is not confined to the advertiser, but is the means of livelihood of some of the so-called respectable practitioners of medicine. I have even known reputable men to send patients to well known "respectable" abortionists, and subsequently finish the job by curetting the unfortunate patient.

Those who apply for abortions are from every walk of life, from the factory girl to the millionaire's daughter; from the laborer's wife to that of the banker, no class, no sect seems to be above the prevention of conception, or the destruction of the fetus. What has produced this awful state of affairs? How are we going to remedy it?

There are two reasons why men will produce criminal abortions; first for money and second to cover up their own sins, and we find that the thirst

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